Fig. S1  Nitrogen sorption isotherm and corresponding pore size distribution curve of typical g-C$_3$N$_4$. The specific surface area was calculated by a standard multipoint BET method using the adsorption data in the P·P$_0^{-1}$ range from 0.05 to 0.30. The BJH model applied to the desorption branch of the isotherm which was utilized to determine the pore size distribution.
Fig. S2  SEM images of CN-VA-4 (a) and CN-EB-760 (b).
Fig. S3  High-resolution XPS spectra of C 1s and N 1s for g-C$_3$N$_4$ with different post-treatments. The Shirley model was selected as background type and GL(30) was adopted as fitting curve shape.
Fig. S4  Photocatalytic degradation of RhB in the presence of CN-VA-4 (a), CN-EB-760 (b) and corresponding samples after half-year storage.